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MOUNTING VOLVOX

English Mechanic (Feb. 14, 1913) offers the following method for preparing this interesting organism. If in sufficient quantity pour through a fine cloth funnel. After a couple of minutes place the cloth in tube or dish of 2½ per cent formol. Fix for about 5 minutes. Remove the muslin containing the material, which will now be a gelatinous mass of volvox and other small organisms that may have been present.

To remove volvox from muslin, place some 2½ formal in a slightly sloping white plate. Open out the muslin and place the volvox in contact with the fluid. A sable brush and a hand lens should be used to push each volvox off the cloth and up the inclined plate out of the formol. If there is much dirt pour off the old fluid, wipe the plate and replace with clean formol.

Transfer to ringed cell with pipette, and mount. Care is necessary to prevent drying out and the formation of air bubbles.

COUNTING LEUCOCYTES IN CEREBRO-SPINAL FLUID

Chauvet (Le Monde Med.) refers to the necessity of technical exactness in this process for diagnostic and other reasons. The small amount of the fluid available is a complicating fact. He describes at some length the two methods in use: Centrifuging, and Nageotte's Cell Method.

The centrifugation method involves centrifuging, the clotting of the cellular elements, dropping clot on slide, drying it in open air, fixing with absolute alcohol or ether, staining in aqueous eosin (1 per cent) or with hæmatoxylin, mounting in cedar oil. Under normal conditions one finds not more than 2 or 3 mono-nuclear cells on an average in a 1-12 immersion field. It would imply a pathological lymphocytosis if 7 or 8 lymphocytes were to be found in that space. It is quite clear that the method is open to such possible errors that enumeration by means of it must be uncertain in diagnostic value.

Nageotte's Cell Method involves the use of a cell of known dimensions. Its bottom is ruled into minute parallelograms. This cell is completely filled with cerebro-spinal fluid to which a minute amount of Unna's blue has been added for staining. The filled cell

is placed on the movable stage and allowed to rest for five minutes until the lymph cells settle. The cells in a few adjacent rectangles can be readily counted by means of Leitz No. 5 or 6 objective. The number per unit of volume can be computed from the known depth of the cell and the size of the parallelograms.

The latter method is much more exact and convenient.

TOXIC SECRETIONS OF INFUSORIA

Woodruff (Jour. Exp. Zool., May, 1913) reaches the conclusion that *Paramecium* and some of the hypotrichous protozoa excrete substances that are toxic to, and tend to inhibit the rate of reproduction in their own species. These products are specific in their action since their presence does not uniformly influence the rate in a species other than that producing it.

It is apparent that this factor is necessarily one of importance in determining the continuance of cultures and the succession of organisms in them.

A few pedigreed specimens of *Paramecium* were placed in culture media, which differed only in that one had contained a rich culture of *paramecia* for several days, another had contained a similar culture of hypotrichs, and another had no protozoa. All the media had the same bacterial flora.

RELATIONS OF CELL SIZE AND NUCLEAR SIZE IN OXYTRICHA

Woodruff (Jour. Exp. Zool., July, 1913) finds that there is great variation both in the actual size of nuclei and cells and in the size of these in relation to one another in all the periods of the life of the race. That is to say there is no absolute or relative size which is characteristic of any age. The average size of the nucleus, and of the cell itself is *smallest*, and the proportion of nuclear to cytoplasmic matter is *highest* during the period of greatest reproductive activity. The author believes that the mass relations of nucleus and cytoplasm are not the determining features of reproduction.

INFLUENCE OF MATING IN PARAMECIA

Jennings and Lashley (Jour. Exp. Zool., April and Aug., 1913) find that the conjugation of *paramecia* has a distinct influence upon